THE REINFORCEMENTS OF LANGUAGE DEFICIT IN AUTISTIC CHILD THROUGH APPLIED BEHAVIOR ANALYSIS (ABA) METHOD

Faikatul Milasari
English Literature, Faculty of Languages and Arts, State University of Surabaya
faikatulmilasari@mhs.unesa.ac.id

Abstrak

Dalam beberapa dekade terakhir, jumlah orang yang didiagnosis sebagai autisme telah meningkat secara besar-besaran menjadi sekitar 1 dari 100. Di Indonesia sendiri jumlah anak autis meningkat setiap tahunnya. Namun, penyembuhan anak-anak dengan autisme masih relatif rendah, terutama orang-orang autis yang tinggal di desa-desa (pedalaman) Indonesia karena rendahnya pendidikan di daerah itu. Itu sebabnya orang tua perlu lebih banyak pemahaman tentang bagaimana memperlakukan anak-anak autis untuk mengembangkan defisit bahasa mereka seperti anak-anak normal lainnya. Penelitian ini akan membahas penguatan defisit bahasa pada anak autis yang dilakukan melalui metode analisis perilaku terapan (ABA). Hal tersebut dialami oleh Dylan, seorang anak penderita autis yang berusia 3 tahun yan mana perkembangan bahasanya lebih lambat disbanding anak-anak pada umumnya sehingga membutuhkan beberapa bantuan bahasa melalui metode ABA untuk berkomunikasi dengan orang lain. Hal utama dalam penelitian ini fokus pada dua rumusan masalah; (1) Apa saja kategori operan verbal dalam pengembangan bahasa Dylan dalam menggunakan metode ABA? (2) Bagaimana hasil perkembangan bahasa Dylan dalam menggunakan metode ABA? Maka dari itu, dalam menyelesaikan penelitian ini, metode yang digunakan adalah metode campuran yang bersifat deskriptif kualitatif digunakan untuk menjawab masalah yang pertama (RQ1) dengan teknik dokumentasi karena sesuai dengan data yang digunakan yaitu dalam bentuk video dan kuantitatif untuk menjawab masalah yang kedua (RQ2) dengan menggunakan tonggak penilaian Program Penilaian dan Penempatan Milestone Perilaku Verbal (VB-MAPP) oleh Sundberg untuk mengukur perkembangan Bahasa sesuai hasil rumusan masalah yang pertama. Dalam penelitan ini, teori perilaku verbal khususnya operant verbal oleh Skinner yang mengenai tentang perkembangan Bahasa dalam cabang psikolinguistik diterapkan untuk menganalisis data. Hasil penelitian menunjukkan bahwa di antara data video pertama (V1) hingga video ke 4 (V4) beberapa kategori operan verbal (VO) digunakan sebagai penguatan positif yang mana diantaranya mand, tact, echoic, intraverbal dan kategori lainnya yang tidak ada dalam operan verbal tetapi peneliti mengkategorikannya ke dalam jenis "gestural" dan “verbal tact” sebagai kategori baru. Dengan demikian, melalui hasil VB-MAPP dapat dilihat bahwa perilaku verbal Dylan mengalami perkembangan dan dia juga mampu mempertahankan apa yang telah dia pelajari sebelumnya. Namun, total skor transisi bentuk tonggak VB-MAPP, bentuk hambatan dan perilaku negatif dan kontrol instruksional di antara semua data video adalah rata-rata 1 yang berarti Dylan masih harus berlatih lebih banyak dan mempelajari beberapa kategori seperti teks dan transkripsi yang mana belum pernah dia terapkan sebelumnya agar memperoleh keterampilan yang dibutuhkan untuk bisa belajar dalam lingkungan pendidikan yang tidak terlalu ketat.

Kata Kunci: *Autisme, Operan Verbal (VO), Analisis Perilaku Terapan (ABA), Program Penilaian dan Penempatan Milestone Perilaku Verbal (VB-MAPP)*

Abstract

In recent decades the number of people diagnosed as autism has increased massively to an estimated number of 1 in 100. In Indonesia itself the number of autistic children has increased every year. However, the curing of children with autism is still relatively low, especially the autistic people who live in villages (inland) of Indonesia since the low education in that area. That’s why the parents need more understanding about how to treat their autistic children to develop their language deficit like other normal children. This study would discuss the reinforcements of language deficit in autistic child that was done through applied behavior analysis (ABA) method. It occurred to Dylan, an autistic child of 3 years old in which his language developed more slowly than others and need some language reinforcements through ABA method to communicate with others.The primary of this study is two questions; (1) What are the categories of verbal operant in Dylan’s language development in using ABA method? (2) How does Dylan's language developmental result in using ABA method? To finish this study, the method applied was mix method which is descriptive qualitative used to answer RQ 1 with documentation technique since it is in the form of videos while quantitative to answer RQ 2 with Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP) by Sundberg. In this study, the theory of Verbal Behavior using verbal operant by Skinner of language development in psycholinguistics point of view was applied to analyze the data. The finding showed that among video 1 (V1) to video 4 (V4) data some

categories of verbal operant (VO) were used as positive reinforcements there were mand, echoic, tact, intraverbal and other category which did not exist in the verbal operant but the researcher categorized it as "gestural" and "verbal tact" as new categories. Thus, through VB-MAPP Milestones result it can be seen that Dylan's verbal behavior got development and he was able to maintain what he had learned before. However, the total transition scores of VB-MAPP milestones form, barriers form and negative behavior and instructional control among all of videos data were average 1 it meant Dylan still had to practice more and learned some categories such as textual and transcriptions which were not applied yet to acquire the skills needed for studying in a less restrictive educational environment.

Keywords: *Autism, Verbal Operant (VO), Applied Behavior Analysis (ABA), Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)*

INTRODUCTION

Autism spectrum or known as autism spectrum disorder (ASD) explains a range of condition classified as a neurodevelopmental disorder. According to American Psychiatric Association 2013a, individuals affected with autism spectrum disorder identify with two types of symptoms that are impaired social communication (gestural and verbal) and repetitive patterns of behaviors, interactions, restricted interests and persistence on sameness (Chaaya, Saab, Maalouf, & Boustany, 2016 p. 514) while other problems related with autism contain behavior problems, sensory and perceptual deficits, and intellectual disability. Therefore, autistic children tend to be regarded as children who do not have empathy that is why they are shunned by their peers. However, generally children with autism have particular superiority or intelligence that is not known by many people.

Autism is also known to be an exceptionally scarce 'disorder' that occur in a tiny proportion of the population, but in recent decades the number of people diagnosed to be somewhere in the broader 'autism spectrum' has increased massively to an estimated number of 1 in 100(Milton, 2000 p. 1). Ten to thirty-seven percent of people with autism have medical conditions that are comorbid. In Indonesia itself the number of autistic children has increased every year. According to Central Bureau of Statistics Indonesia, the number of autistic children aged 5 to 19 years was successfully recorded in 2014 there were about 112 thousand inhabitants (Ormrod, 2008). Thus, the curing of children with autism in Indonesia is still relatively low, especially the autistic people who live in villages (inland) of Indonesia since the low education in that area. Most autistic children in the area go to Jakarta due to lack of treatment in their origin. So, basically the parents need more understanding about how to treat their autistic children to develop their language deficit like other normal children.

Skinner in his book, Verbal Behavior argued that humans acquire their ability to speak and comprehend a language in the same way that they learn other behaviors as children and language are studied behavior caused by environmental variables similar to non-language behaviors such as motivators, reinforcement, or extinction (Skinner, 1992 p. 35), for example, the model of adv. showing her beautiful hair as reinforcement to buy shampoo. Her behavior can influence the other person to do the same thing as her, so that according to skinner behavior is a language. He also asserted that the language has a special nature that encompasses social interaction between speaker and listener and the interaction of the pair immediately begins so that the speaker can obtain access to environmental reinforcement and control through listener behavior (Skinner, 1992, p. 19). Most of Skinner's theories revolve around the thought that language is derived based on individual behavior. He assured that language, such as behavior, was obtained by using well-known conditioning principles, including reinforcement. He assured that children learn words by connecting sounds with certain objects. Thus, this theory can apply to children with autism since they need another person to reinforce their language deficit to develop.

In addition, they learn a language very effectively by imitating adult or another peer. Typical developments for children with autism and language acquisition begin with a long period of echolalia that is a repetition of the speech of others. Repetition may be either delayed or quickly pronounced and often sounds like an echo. Nevertheless, not all echolalia is a functional language and may not be a language development function. One of the benefits of Skinner's verbal behavior theory is that he defines a very obvious behavioral approach when evaluating and

intervening with children who have a language deficiency. Verbal behavior as described by Skinner is a behavior in which listener reinforces the speaker and that verbal behavior includes both verbal behavior and non-verbal behavior (e.g., in some cultures a nonverbal behavior "waving hands" can means either saying "good bye or hi" in verbal behavior. Thus, Skinner recognized several category of verbal behavior called as verbal operant that are mands, tacts, intraverbals and echoics; which placed in the expressive language category (Skinner, 1992 p. 50).

As Sundberg find out, the most important of verbal operant stage taught to children in early language is mand (Moretto, 2012 p. 13). The mand is a type of verbal operant that permits the speaker to communicate wants and needs (Skinner, 1992) in which a speaker asks for (or states, demands, implies, etc.) their needs or wants (Sundberg, 2006 p. 530) and its form of the response is under the functional control of motivating operations (MOs) and specific reinforcement. For example, juice deprivation "thirsty" will make juice effective as reinforcement and evoke behavior such as the mand "juice". If the behavior has experienced juice in the past, so that child (behavior) as a speaker is looking for his mother and said "I want juice" then his mother opens the fridge and gives a glass of juice as (consequences). Here, mand differs from other verbal operants, in that they mainly benefit for the speaker whereas other verbal operants function mainly for the benefit of the listener, so that the autistic's child as a speaker in this stage while the mother (environment) as a listener and vice versa.

Echoic is a type of verbal operant that occurs when a speaker imitates verbal behavior of another speaker (Sundberg, 2006 p.531), and it is also under the control of other verbal behavior. However, its form relates (in part or whole) the form of the verbal stimulus (Bondy, Tincani, & Frost, 2004 p. 249) such as ("cookie," "cat," etc.) or entire phrases ("I miss you," "Thank you," etc.). If a child did not spontaneously echo words, then it is possible to using the word "milk" to start teaching echoic since the child has already acquired in mand stage (Barbera, 2007), so that speaker said Milk as a reinforcement of echoic to child. Then she tries to make child's behavior tends to imitate the word "Milk" repeatedly. If child feels difficulties, the echoic targets can be broken into smaller parts and chained them together. In addition, if the behavior is success the speaker has to give positive feedback such as "right!" or reward to make a child behavior increase. From this, the child will learn that reinforcement will be available upon echoing the parent's words (Moretto, 2012 p. 20). In this part the listener begin to focus on speaker said or wants.

The tact is evoked by a particular object or event of an object or event (Skinner, 1992, p. 82) which is simply labeling what is experienced in one's environment (Moretto, 2012 p. 18) so that it is a type of verbal operant in which a speaker names things and actions that the speaker has direct contact with through any of the sense modes (Sundberg, 2006 p. 530). Therefore, Skinner made this word from contact since this verbal operant is controlled by its contact with some aspect of the stimulating environment (Bondy, Tincani, & Frost, 2004 p. 249). The general examples of tact include labeling or naming objects, events and activities, containing the relations between items or events currently in the speaker's environment. Table 2.1.2 shows a condition in which a child is seeing a glass of milk on the table. It happens because of the stimulation of the senses of his/her sight. Thus, he or she labels it with "Milk" as tact and said to her/his mommy "Look Mommy, Milk" so it means that the child wants the glass of milk on the table. Hence the consequence shows that his/her mommy will take it for him/her.

As Skinner stated that an intraverbal is under the stimulus control of other verbal behavior, initially from other people but increasingly from oneself as one's verbal repertoire expands (Bondy, Tincani, & Frost, 2004 p. 249). So it is a unit where a speaker responds to the verbal behavior of another speaker but unlike the echoic operant, this is

not a repeated word or phrase (Moretto, 2012 p.21). From the definition briefly is what a child says is based on what speaker say (however it is not in contact with the item, property, or action) but does not match it exactly. For example, the speaker said to the child "Did you drink a glass of water?" Thus the child behavior has to answer the question and he evokes with intraverbal response in which he answer "No, milk" so that this operant used to start a conversation between speaker and listener. Furthermore, the speaker continues with asking back "Oh, yeah do you like it?" as a consequence of reinforcement to make the language skill of child is more increase. Another simple examples is "Twinkle, Twinkle, little. ." then a child say "star", answering questions such as "What's your name?" and a child states "Dylan" or responding to phrases such as "one, two, three, four ...." and "roses are red, violets are . .".

Textual behavior (Skinner, 1992) is kind (Sundberg, 2006 p. 532). For example as shown on the table, the speaker asked the child to read the word "Milk" while pointed the word. Thus, the child behavior has to read it "Milk", so the correct reading will get the positive consequences such as "Good Reading" which is stated by the speaker. Furthermore, the *Transcription* stage is almost similar with the textual but in technical terms; it is a kind of verbal behavior in which a spoken verbal stimulus controls a typed, written, or finger-spelled response (p. 532). According to Skinner the transcription consists of spoken and written words that are spoken (Skinner, 1992). So, in conclusion the child has to make the accurate writing and spelling such as the previous example the speaker said "correct!" which means his/her writing is accurate.

Verbal behavior based on the Skinner approach reflects Applied Behavioral Analysis (ABA), which is the application of behavior analysis and behavior modification as part of the learning process (Sundberg, 2011). The process begins by assessing the relationship between targeted behavior and the environment and ends with the use of the ABA method to change that behavior. Thus, Skinner argues that to develop verbal behavior, an understanding of the principles that explain how learning takes place is very important. In the field of verbal behavior, behavioral approaches include the principles of reinforcement, fading, extinction, chaining, generalization, formation, discrimination and task analysis to encourage language development and communication in children (Skinner, 1992). Reinforcement is the process by which a behavior is amplified in duration, rate, frequency, or intensity. There will be two types of reinforcement can be used, either positive or negative which both works to improve or maintain the desired verbal behavior in children. However, the best consequence which is mostly used is positive reinforcement. It is used to improve the behavior. It can apply in any kinds of verbal operants.

Furthermore, besides to reinforce the autistic behavior, the reinforcement result is needed to answer RQ 2 by making an assessment sheet. To begin assessing the ability of verbal behavior of children, it is significant to comprehend how the verbal operant works so that an accurate assessment of the current level of child instruction can be formulated. The educational curriculum for autistic children should contain comprehensive language acquisition so that the program can be considered successful. In order to do this, the identification of language and communication deficits is an essential component for the development of appropriate and effective interventions. Furthermore, DeWitt stated language assessment and intervention can be hard and complicated for children with autism whose have a lot of language matters experienced as a whole (DeWitt, 2013 p.1). However, it also can help them to develop their language deficit. Then, in measuring language, the main focus is on langue structures, topographic, and the incorporation of famous linguistic terms such as phonemes, morphemes, lexicon, syntax, grammar, and semantics.

The Verbal Behavior Milestone Assessment and Placement Program (VB MAPP) which developed by Sundberg in 2008 has five components. First is Milestones Assessment, provides a sample of the child's verbal skills. Second is Barriers Assessment, provides an assessment of the 24 learning barriers and common language barriers that typically faced by children with disabilities. Third is Transition Assessment,

contains 18 areas and can identify whether a child is making significant progress and has acquired the skills necessary to study in a less rigorous educational environment. Fourth are Task Analysis and Skills Tracking, which provide detailed skills and serve as a more complete and sustainable learning and language guide. Fifth is Placement targets and IEPs; this section combines the other four parts and integrates the possible IEP goals for each child. This section assists in placement recommendations and can create a balanced intervention program including all relevant IEP areas (Sundberg, 2008). The main objective of VB MAPP is to recognize the child's skills base and then compare them with to the normally developing child.

The previous study conducted by Emma Niederer (2013) entitled "Improving Language Acquisition of Autistic Children through Implementing Non-verbal Communication in Teaching Methods" had been done by incorporating non-verbal cues into teaching methods for autistic children which has the same goal as the researcher in the study that is to improve language acquisition deficit to them. The aim of her study is intended that autistic children would be able to recognize and remember new words more accurately than just verbal cues used. Furthermore, her study was conducted in school and followed by 8 children with autism and the teaching methods are used by providing two conditions of cards which showed a picture of the fruit or vegetable (Niederer, 2013 p. 12). However, her study did not conduct a proper assessment so that no significant effect can be found even though the subject of data more than two children but it is still the research gap of limitation data.

Thus, the researcher of this study interests to investigate one of the language deficits of autistic children entitled: The Reinforcements of Language Deficit in Autistic Child using ABA Method. In this case, the subject data was taken from YouTube in Justusseven channel. One of the autistic children that will be researched named Dylan at the age of 3 until 4 years old, so there will be four videos analyzed to assess his language development. In video showed that Dylan was doing a therapy program used ABA method with his therapist or his mother at home focused on verbal operants to improve his communication skill. This study aims to develop the language deficit of Dylan through ABA method. To analyze how the method works, so that it can also applied by some mothers who has the same case as the study to make them easy to improve their children language without dealing with doctors constantly.

METHOD

According to the aims of this study, it is conducted to find the categories of verbal operant in Dylan's documentation (autistic child) during doing an ABA therapy with his mother at home. In order knowing the categories, the researcher in this study wants to reveal the reinforcement result of his therapy using a proper assessment sheet called VB-MAPP in which has been explained in the previous chapter. Therefore, this study needs a qualitative and a quantitative method to analyze these two goals. Thus, Mix method is using in this study. As Creswell stated that mixed method is a study approach which is prevalent in the behavioral, social, and health sciences, in which the researcher collects, analyzes, and integrates quantitative and qualitative data in a single study or in a continuous long-term investigation program to answer their research questions (Creswell, 2011). It is a proper method to use in this study to analyze both RQ1 and RQ2.

In analyzing the data through mix method the researcher used convergent parallel design by Creswell. Firstly the researcher collected both types of data concurrently. After the data was collected, they were analyzed separately, first analyzed the RQ 1 then continued with RQ 2. Next step related them to merge the results. Then the last was interpreting these combines result. To analyze the qualitative data, the data techniques used was descriptive analysis. According to Miles, Huberman & Saldana qualitative data analysis is describing analysis that is referred at tracing out legitimate and stable relationship among social phenomena based on regularities and sequences, it is as comprehensive sourcebook. Thus, the approach is labeled as "transcendental realism" (Miles, Huberman, & Saldana, 2014) in which their analysis has three main components; data condensation, data display, and drawing and verifying conclusion.

These components were used in this study to analyze the RQ 1 which is needed to describe the categories in Dylan's learning process. While to analyze quantitative method, the data taken from RQ 1 were collecting into numerical data and analyzed using mathematically based methods in

particular statistics (Creswell, 2011) which is used to measure the reinforcement result of RQ 1. Thus, RQ 2 data scored based on VB-MAPP form. The last, these combines result was interpreted to make a conclusion. In order analyzing the data associated with theories, the research subject of the study is important to know in which area the study focus on. The research subject of this study was Dylan. He was diagnosed with ASD and doing an ABA therapy at home. Thus, his documentation video of learning process in the age of 3 and 4 became the object of this study.

Since the data was documentation video upon Dylan's learning process through ABA method, so that the data was taken from his videos in YouTube in the channel named Justusseven. The total data were 4 videos. The first video in the age of 3 while the second till the last video was in the age of 4. Thus, data collection technique used in this study was video documentation of Dylan's learning process itself. To simplify collecting data the researcher used some tools such as a laptop, an earphone, a note, and a pen and internet connection. Thus the instruments of this study were the scripts and the researcher herself who collected and transcribed the script, and also the VB-MAPP form that used to measure the data result.

ANALYSIS

In this research, the finding will be divided into two sub sections, there were the categories of VO and the statistics of Dylan's behavior (language) based on the first result. First is committed by Skinner theory of behavior and second uses VB-MAPP form by Sundberg. There were 4 categories of VO applied and 2 new categories were found. Also, the statistics of Dylan's behavior (language) based on the first result would be applied as follows;

1. The Categories of VO

1.1 Mand

Table 1.1 The Category of Mand

No.	Antecedent	Behavior	Consequence	Source
1.	(His mom is holding an orange jelly)	Og, og, og, og (asking orange jelly).	(Giving the jelly) Nice job.	V3

The table 1.1 was the data that have been found in V3 as the category of mand. Started by asking an "Orange jelly" that was held by his mom as an antecedent and spontaneously he said "og, og, og, og" which referred to it. Even though with unclear pronunciation it meant that he had learned that word before and remembered it. As consequence, he got and ate the jelly so that his mom praised him with "nice job". Here, it indicates to *mand* because the keyword "asking" appeared in motivating condition which was used by Dylan to communicate his wants to eat orange jelly.

1.2 Echoic

Table 1.2 The Category of Echoic

No.	Antecedent	Behavior	Consequence	Source
1.	Say milk, milk	(trying to say milk)	Good	V2
2.	Say mama Dylan,	Mama	Good	V2
3.	Monkey	Monk, monk	Monkey	V3

According to the Table 1.2, the data was in *echoic* category using 1 syllable, as seen that the word "Milk" used as antecedent with statement "Say milk, milk" by his mom and later Dylan's tongue tried to say it. It was indicated to echoic since Dylan imitated his mom behavior. Another, similar data with 1 syllable also found in *V3* that was "Bear, woof, and fish" with antecedent of statement "What this say?" The consequence of all data was praised with good and nice job. Thus, The similar data with 2 syllables in echoic category of *V2* were "Mama, bubbles, and cookie," that he could pronounce it properly (for more data see appendix, page 62). However, the word "Monkey, he only imitated its first syllable "'mʌŋ".

No.	Antecedent	Behavior	Consequence	Source
1.	(He is holding a fork)	A fork, fork, fork	Okay we can do with your fork.	V3
2.	(seeing a spilled water on the table)	Te, wa, ter, te, wa, ter.		V3
3.	(His mom is holding a banana).	Banana	Now you want banana, you can kill it.	V3

1.3 Tact

Table 1.3 The Category of Tact

Based on the table 1.3, the tact category of 1 syllable was only found once in V3 since tact is a type of VO in which a speaker names items and actions that the speaker directly in contact with through any modes of the sense. In that situation, Dylan was holding a fork and his behavior directly said "a fork, fork, fork", as the name of tools. As consequence, it could be seen that it was a positive reinforcement in which his mom praised him to cut his banana with that fork.

The category of tact in 2 syllables used "Water and Cookie" as an antecedent. It happened inadvertently during learning process in V3 when the water he drank spilled, suddenly he was saying "ˈwɔːtə" repeatedly sounds there was prefix "tə" at beginning as "tə ˈwɔːtə" that showed his behavior to "water" . Furthermore, this category in 3 syllables was "Banana" that had been tacting through his mom's hand and he could pronounce it properly. The reinforcement was also in positive way by giving the banana to him. All the data of tact was taken from V3.

1.4 Verbal Tact

Table 1.4 The Category of Verbal Tact

No.	Antecedent	Behavior	Consequence	Source
1.	What is this?	Babawl	This is bowl. Nice job.	V3
2.	What is that?	Emo, Emo,	high five, that's Elmo	V3
3.	What are we doing? What is this?	Rubbing	Clapping	V4
4.	Raurr… What's that?	Osau osau	here the dinosaurs	V3

The data in Table 1.4 did not include in any VO category. However, the researcher categorized it in the category of "Verbal tact" since it was almost similar with *tact* that evoked an object or item but the antecedent was in verbal stimulus with questions "What is this? Or "What's that?" Thus, the data in 1 syllable was "Bawl, ball, cup and milk". His behavior through the word *bawl* and *ball* was done by adding the prefix "ba" as "Babawl and Baball". Furthermore, the category in 2 syllables was "Elmo, puzzle, and rubbing". Here, Dylan's behavior in answering Elmo he said "ˈ ʌmoʊ" by missing "l" and changed phonetic vowel of "ɛ" to "ʌ" which should be pronounced "ˈɛlmoʊ". Even though he pronounced in wrong or missing pronunciation, his mom still gave him a positive reinforcement by praised him with high five while emphasized the word "ˈɛlmoʊ".

Another improper behavior was he said "ˈrʌbɪ" of "ˈrʌbɪŋ" (Rubbing) by missing "ŋ" to names his mom action but actually what his mom did and meant "ˈklæpɪŋ" (Clapping) (see appendix page 69 for more data). The last in 3 syllables, the word used was "Dinosaurus". The verbal stimulus from question "Raurr… What's that?" then Dylan replied "əˌsɔ" of "daɪnəˌsɔr" by missing the first syllable "daɪn and last r". However, with positive reinforcement it showed that he had been tried better.

1.5 Intraverbal

Table 1.5 The Category of Intraverbal

No.	Antecedent	Behavior	Consequence	Source
1.	Okay Dylan, we're going to start with,	One	Good	V4
2.	Is it yummy?	A Yummy, yummy	Yummy, yummy.	

The data in table 1.5 was found in V4, in which Dylan's behavior based on what his mom said. It meant he had been able to respond his mom statement to count sequentially and he responded it by saying 1 to 9 correctly (see appendix page 69) even though with indirect verbal prompts. Next was found in V3 for word "Yummy and Banana" that pronounced properly by Dylan since the word was already experienced before. It could be seen that his memory and language development had increase.

1.6 Gestural

Table 1.6 The Category of Gestural

No.	Antecedent	Behavior	Consequence	Source
1.	Hi Dylan, time to do the puzzles. D for Dog, C for Cat, doing Dylan, Fishy. Dylan do it.	(doing the puzzles as his mom asked)	Good job. You does it. Here's your ball.	V1
2.	You don't want your milk?	(drinking his milk)	Whoa, you drink it. Now you know how to drink it.	V3
3.	Okay we'll take your card.	(giving the card)	Nice job	V4

In order *verbal tact*, there was also *gestural* which not include in VO category. This category was in contrast with *intaverbal*. If intraverbal was under the verbal stimulus control of other verbal behavior, however it was in under nonverbal stimulus control of other behavior. Simply, the behavior of intraverbal was verbal stimulus while in gestural was nonverbal stimulus. The data that fitted this category was found in V1, V2, and V3 in which his mom asked him to play the game and asked him some questions thus Dylan's behavior in responding was nonverbal that was doing the game as his mom command without spoke any word. The reinforcement given was mostly positive since it was working to improve his behavior.

2. VB-MAPP of Dylan's Language Development Therapy

The data that had been applied in RQ 1 would be used as reference to answer RQ 2. In this part, the result of Dylan's language ability used ABA method would measure using a proper assessment that was divided into 3 categories that were Milestones, Barriers, and Transition Assessments as below:

2.1 Milestones Scoring Form

Table 2.1 Milestones Assessments Scores

Result

Key:	Score	Date	Color	Tester
V1:	10			Mommy
V2:	3.5			Mommy
V3:	21.5			Mommy
V4:	12.5			Mommy

Note: - Yellow color in Tact category for score 2 was *Tact* while for score 4,5 was *Verbal tact and* Yellow color in *Vocal* category the score was only 0.5

2.2 Barriers Assessment

The barriers scores measured based on learning process in doing Milestones assessment. As the result at table below:

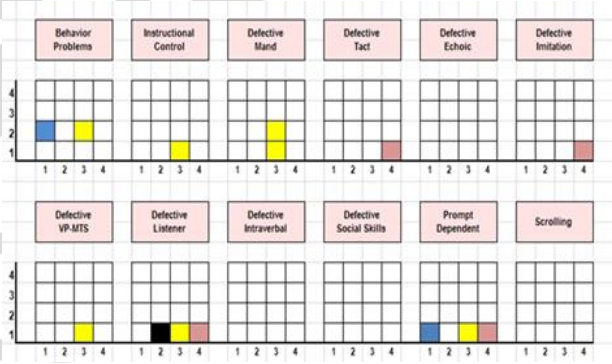

Table 4.8 Barriers Assessments Scores

Result

Key:	Score	Date	Color	
V1	1			Mommy
V2	1			Mommy
V3	7			Mommy
V4	4			Mommy

2.3 Transition Assessment

This assessment skill measured based on both of the overall score on the VB-MAPP Milestones and Barriers assessment which was used to evaluate a child's ability to

learn in a less restrictive educational environment. As the result at table below:

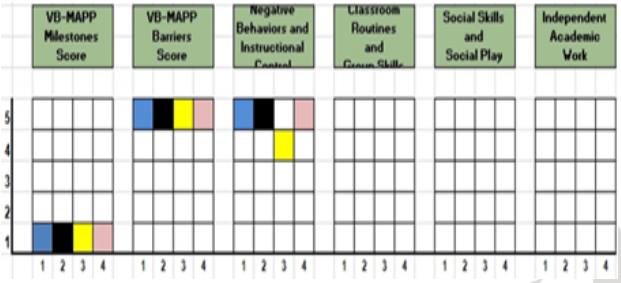

Table 2.3 Transition Assessment Scores

Result

Key:	Score	Date	Color	Tester
V1	3			Mommy
V2	3			Mommy
V3	3			Mommy
V4	3			Mommy

The score of Transitions above in ***VB-MAPP Milestones*** category for all of Dylan's videos therapy were 1 because the total scores in Milestones assessments were below to 20 at all. Also, **in *VB-MAPP Barriers*** the scores were the same as Milestones. However, these categories were at level of 5 in which all scores in Barriers assessments were below to 10. The last score for Transitions is ***Negative Behavior and Instructional Control***. In this part, the child has no behavioral issues. Based on criteria of transition scoring form, those demonstrated by a score 1 on Barriers Assessment at level 5 for 1st, V2, and V4 videos while for V3 the score 1 at level 4 since a total score on negative behaviors and instructional control on the Barriers Assessment is 2. It meant negative behavior in his V3 video was highest among others.

Furthermore, the analysis covered the elaboration of all research questions (RQ1&RQ2) which analyze about Dylan's language development in using ABA method in which explain as follows.

Dylan's Language Development in Using ABA Method

Dylan was learning language with his mom through ABA method with reinforcements to develop his language delay. This condition supported the theory of Skinner. According to him, language was like other behaviors acquired in the same way and perceived as a result of habitual behavior learned and influenced by the environment in which they lived, and also language was taught through various reinforcements or punishments in the environment (Skinner, 1992). Trainee was the most crucial in the language development process (Otto, 2010). Thus, the reinforcements mostly used in all categories during therapy were positive reinforcements since positive reinforcement as a presence of stimulus that mostly used by operant to improve the language as behavior learning. In fact, with positive reinforcements his data scores of learning process among all categories were increased (see table 4.7 Milestones Assessment Score).

The categories of VO that used in applying ABA method were *mand*, *echoic*, *tact and intraverbal.* As skinner stated, the category of verbal behavior was labeled as a verbal operant which could be interchanged with the term response. Thus, he identified six categories of verbal operant, including mand, echoic, tact, intaverbal, textual and transcription (Skinner, 1992 p. 7). However, the category of textual and transcription did not found in this data or research. Thus, Skinner said that *mand* was the most important of verbal operant stage taught to child in early language. Yet, his theory of mand was contrary to the data result here because the fact it did not occur to Dylan. In his early therapy Dylan was only giving nonverbal responds to his mom demanded so that the researcher categorized it in the category of *gestural*. *Since* Dylan showed his behavior to an antecedent and there was also consequence toward these actions, it should be concluded in a name or a type as like others as a new category. It did not include in VO category that was why the researcher named it "gestural". It was in contrast with intraverbal category in which the behavior respond of verbal stimulus was verbally.

The development of his language could be seen firstly through the category of *echoic*, in which he started to speak up for being a verbal child. It could be proved on the data, the category of echoic was applied in his next learning therapy (see Table 4.2, the source was V2). As Sundberg claimed that echoic was on the second stage and it was a category of verbal operant that occurred when a speaker imitated verbal behavior of another speaker (Sundberg, 2006 p. 531). The data was on the Table 4.2 with total scores 5.5 according to Table 4.7. Moreover, if child felt difficulties, the echoic targets could be broken into smaller parts

and chained them together (Moretto, 2012 p. 20). It found on Table 4.2.2 in the 2 syllables words, in which was imitated became a syllable whether it pronounced at first or last word only. Furthermore, its development also could be seen from the next data that *intraverbal* had been applied at V3 and V4 (see Table 4.5). Intraverbal was a category where a speaker responded to the verbal behavior of another speaker but unlike the echoic operant that was not repeated word or phrase (Moretto, 2012 p. 21). So it meant Dylan's behavior in accordance with his mom behavior.

The dominant category among all of data was *tact* with scores of 6.5 in Milestones Assessment. However, tact here was divided into two types that were *tact* with score of 2 which included in VO category and *verbal tact* with score of 4.5 which was a new category named by the researcher but not included in VO. If tact was simply labeling what was experienced in one's environment (Moretto, 2012 p.18) and the category in which a speaker named things and actions that he/she had direct contact with through any of the sense modes (an antecedent of nonverbal stimulus) (Sundberg, 2006 p. 530), so verbal tact was labeling items or actions through an antecedent of verbal stimulus that started by questions "what's this? Or what's that?" as in Table 4.4. In opposite with tact, the category of *mand* was the least among all data. It was not applied in early stage as should be said by Skinner, but it applied in V3 and only with scores of 2 (see Table 4.7).

Thus, the problems mostly occurred during learning process appeared in V3 with total overall score of 7 and the least appeared in V1 and V2, see Table 4.8 Barriers Assessment, the form that used to examine language barriers faced by child during therapy and to expand particular intervention strategies to help overcome the problems (Sundberg, 2008). Even though during therapy mostly he was prompted to do the activities and emitted some negative behaviors, but the scores still showed an occasional problem in which Dylan could be handled quickly to fade those kinds of problems by giving positive reinforcements. For further, as researcher explained before that *textual and transcription* category were not found in the data. The reason was according to score on Table 4.9 Transitions Assessment in column of VB-MAPP Milestones Assessment, the overall score was only 1 so that Dylan still needed more practice in these four categories (mand, tact, echoic, and intraverbal).

This subchapter also discussed the findings with previous studies which had the similarity. This research was almost similar with second previous study by Niederer in which she was using nonverbal sign into learning methods by providing two terms of cards which showed a picture of the fruit or vegatable (Niederer, 2013). It was supporting the data in category of tact that used nonverbal stimulus in speaker's environment as reinforcement to improve language acquisition deficit. Another previous study that supported this reseaarch was conducted by Benedict (2007). His research showed that the proper method of language intervention for children with autism to develop their language deficit were Discreate Trial Training (DTT) and Picture Exchange Communication System (PECS). It was also kind of ABA method since its technique was relied on the use of prompts, modeling, and positive reinforcement strategies to facilitate the child's learning. It was also noted for its previous use of aversives to punish unwanted behaviors, the same as ABC chart that used in this research.

CONCLUSION

According to findings and discussion of Dylan's Language Development in Using ABA Method. This research concludes that ABA method with positive reinforcements as a language intervention used in this study supports the improvement of Dylan's language deficit. Thus, the category applied towards the data not *only mand, echoic, tact, and intraverbal* but there were two new categories found that *were verbal tact and gestural*. Mand was not the first category used but this study was applying *gestural* type as the early stage in learning language. Tact and included verbal tact was the dominant category used among learning process. Furthermore, the textual and transciption category were not found in the data

Next conclusion based on the scoring form of Barriers and Transition Assessment. It could be seen that in order his behavior improve, he was also able to maintain what he had learned before. The problems occured during his learning language process overall was minor problems or an occasional problems in which it could be recovered quickly through the positive consequences based on the finding subchapter. For further, since there were no textual and transcription category, it meant

the total score of transition among all data was in average of 1. Therefore Dylan still needs more practice in applying these four (mand, echoic, tact, and intraverbal) and also gestural and verbal tact as new categories.

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